

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently amended) An apparatus comprising:
a plunger;
a stator that forms a magnetic circuit in combination with the plunger, the stator further defining:
an accommodating portion for supporting the plunger with the accommodating portion so that the plunger is capable of reciprocation; and
an attracting portion, wherein a magnetic attractive force attracts the plunger in a reciprocating direction of the plunger and acts between the attracting portion and the plunger; and
a coil that generates the magnetic attractive force when energized,
wherein either one or both of at least an outer peripheral wall of the plunger and at least an inner peripheral wall of the accommodating portion form(s) a magnetic portion made of nickel phosphide, and
the phosphorus content of the magnetic portion is set within a range of ~~5%~~
greater than 10% to less than or equal to 15% in mass percentage.
2. (Original) The apparatus according to claim 1, wherein the magnetic portion is heat treated.
3. (Currently amended) An apparatus comprising:
a cylindrical housing defining a plurality of fluid paths through a peripheral wall thereof;
a plunger;

a stator located adjacent to the cylindrical housing, the stator forming a magnetic circuit in combination with the plunger, the stator further defining:

an accommodating portion for supporting the plunger with the accommodating portion so that the plunger is capable of reciprocation; and

an attracting portion, wherein a magnetic attractive force attracts the plunger in a reciprocating direction of the plunger and acts between the attracting portion and the plunger;

a coil that generates the magnetic attractive force when energized,

wherein either one or both of at least an outer peripheral wall of the plunger and at least an inner peripheral wall of the accommodating portion form(s) a magnetic portion made of nickel phosphide, and

the phosphorus content of the magnetic portion is set within a range of 5% greater than 10% to less than or equal to 15% in mass percentage;

a moving member for reciprocating together with the plunger to control a flow rate of fluid flowing through the fluid paths; and

a biasing means for biasing the moving member in a direction opposite to a direction in which the plunger is attracted by the attracting portion.

4. (Previously presented) The apparatus according to claim 1, wherein the magnetic portion comprises a nickel phosphide layer disposed on an outer periphery of a body of the plunger.

5. (Previously presented) The apparatus according to claim 4, wherein the body of the plunger is made of iron.

6. (Previously presented) The apparatus according to claim 4, wherein the nickel phosphide layer has a surface hardness of about HV 900.

7. (Previously presented) The apparatus according to claim 4, wherein the nickel phosphide layer is formed by plating and is heat treated.

8. (Previously presented) The apparatus according to claim 1, wherein the magnetic portion is limited to the outer peripheral wall of the plunger.

9. (Previously presented) The apparatus according to claim 1, wherein a magnetic resistance portion is arranged between the accommodating portion and the attracting portion and is thinner than said accommodating portion and attracting portion to suppress flux leakage between the accommodating portion and the attracting portion.

10. (Previously presented) The apparatus according to claim 1, wherein a soft nitrided layer is provided on the inner peripheral wall of the accommodating portion.

11. (Previously presented) The apparatus according to claim 10, wherein the soft nitrided layer has a surface hardness of about HV 600.